Lakes, Ponds and Reservoirs

For more information on this project, please contact:
Dr. Joseph E. Morris
Department of Natural Resource Ecology and Management
339 Science II, Iowa State University
Ames, IA 50011-3221
(515) 294-4622
jemorris@iastate.edu

Best Management Practices (BMPs) for Aquatic Vegetation Management in Iowa Lakes

Aquatic vegetation is considered to be one of the most important natural habitats for fish with the amount of plants, as well as species diversity, influencing fish populations. However, management of aquatic vegetation has been often influenced by ongoing conflicts between a fishery and its users. Negative perceptions of aquatic vegetation are even more prevalent in Iowa due to its highly altered landscape, rural and urban, that contributes excess nutrients that often results in increased plant growth. In contrast, the importance of aquatic vegetation to the health of lakes and ponds has been documented by numerous studies; complete eradication of aquatic plants can lead to decreased fish production.

Given the complexity of the aquatic vegetation often found in lakes, there is no one long-term solution to its management although herbicides, grass carp, lake drawdowns, and mechanical methods have been used to manage the short-term issues of aquatic vegetation. The best long-term solution to managing aquatic vegetation is a combination of controls specific for that lake's environmental conditions and fishery needs. Thus, the ultimate goal of this project is to develop the needed BMPs for aquatic vegetation management in Iowa's lakes.

Field collections were initiated July 2006 and continued through August 2010. In this project we measured nutrient composition, pH as well as biological parameters (zooplankton and phytoplankton samples, and young of year sportfish) and aquatic vegetation throughout spring to early fall. The resulting information provided further evidence of both the richness of Iowa's waters as well as the importance of vegetation to both young fish, and water quality and clarity.

Another result from this project is the evidence that a lake's aquatic vegetation can vary over time. For instance, the submerged plant species in Red Haw Lake, one of the original 13 study lakes, has gone from primarily coontail in 2007 to a more diverse species mix in 2009 and 2010 along with subtle changes in water quality. This increased plant diversity and its effect on the pan fishery will be investigated further in 2011 in a project. This particular lake is interesting in that it was one of the first Iowa lakes that grass carp were stocked to control aquatic management in the 1970s. Red Haw Lake was renovated in 2002 to allow for watershed improvements as well as grass carp removal. Future vegetation protocols will focus less on grass carp stockings and more on preventative and selective control measures as well as introducing beneficial native plants into Iowa's lakes (see Cashatt report on previous page).

In 2011 BMPs for aquatic vegetation management will be finalized and distributed for review. Associated with these BMPs will be an on-line video on how to best to manage aquatic vegetation in a wide variety of waterways.